

population studied. Accordingly, bringing the growth of expenditures for high-cost illness down to--or even somewhat below--the rate of growth of other medical expenditures would have little impact on the overall increase in medical expenditures.

This study also suggests that while requiring increased cost sharing by consumers could have a sizable effect on costs in the short term, its use over the long term would be more problematic. Most current proposals to contain costs through this approach attempt to strike a balance between incentives to curb the rising use of services and the burden imposed on affected families. If medical expenditures continue to rise substantially more rapidly than incomes, however, it would be impossible to maintain over the long term whatever balance was established initially. Either the burden on affected families would increase, or the proportion of expenses subject to cost sharing--and, accordingly, the plan's impact on expenditure growth--would decline. As in the case of a catastrophic insurance plan, any likely indexing provisions would provide only a partial solution. Accordingly, if the burden imposed by cost sharing was maintained at a constant level over the long term, supplementary cost-containment measures would be required to compensate for cost sharing's declining impact on expenditures.

Finally, the unusually large subsequent-year expenses of high-cost families would pose difficulties for cost-containment strategies relying on consumer choice among competing insurance plans. To the extent that high-cost families can anticipate this subsequent elevation of expenses, they could contribute substantially to "adverse selection"--that is, the tendency for families to choose a level of insurance commensurate with their future expenses. By raising the cost of plans with more thorough coverage relative to the value of their benefits, this adverse selection would damage the ability of such plans to compete with others.



Unusually expensive illnesses--often called "catastrophic illnesses"--have been a focus of concern at both the federal and state levels of government, as well as in the private sector, for many years. Such illnesses produce large costs for governments, for individuals, and for those employers who pay health insurance premiums. Moreover, they can present a family with an unmanageable financial burden or require that it forgo needed medical care.

The problem of high-cost illnesses should be distinguished from the problem of rapidly rising average or total health-care costs. The two are related insofar as high-cost illness contributes to the overall rise in average or total medical expenses, and, conversely, rising total medical expenses contribute to an increase in expenditures for high-cost illness. But growth in expenditures for high-cost illness depends on more than this. It is also affected by changes in the distribution of medical expenses--that is, changes in the proportions of medical resources devoted to different types of care. For example, in a setting in which resources are increasingly allocated to high-cost, high-technology care for the seriously ill, expenditures for high-cost illness may grow more rapidly than average costs. On the other hand, expenditures for high-cost illness may grow more slowly than average costs if resources are increasingly devoted to prevention, outpatient care, and other relatively low-cost services.

Information on catastrophic illnesses, and on the costs they impose, has important implications for health policy. For example, the patterns exhibited by such illnesses--such as their frequency in different sorts of families, their duration, the likelihood of recurrence in a single family, changes in their frequency over time, and so on--are critical information in deciding whether, and how, to provide insurance against the resulting costs. In addition, these patterns may have a substantial bearing on the effects of various strategies to control the rise in medical-care costs, such as proposals to increase consumer choice among health insurance plans or to increase cost-sharing requirements.

This paper addresses a variety of specific questions about the patterns shown by catastrophic illnesses in the non-elderly, non-poor population and about the costs these illnesses generate, including:

- o What proportion of aggregate health-care expenditures are currently attributable to high-cost illnesses?
- o How rapidly have expenditures for high-cost illness been growing, and to what extent has this growth contributed to the rapid increase in total medical expenses?
- o What proportion of non-poor, non-elderly families are affected by high-cost illnesses, either within a single year or over a period of several years?
- o What are the previous and subsequent medical expenses of high-cost families?

#### PLAN OF THE PAPER

The remainder of this chapter describes the scope of the paper and the data upon which it is based. Chapter II presents a one-year snapshot of family medical expenses, focusing on the proportion of families exceeding various levels of medical expense within a single calendar year. Chapter III expands the focus to the pattern of families' expenses over periods of two or more years. It addresses questions such as the extent to which high medical expenses reflect chronic rather than acute conditions. Chapter IV presents a brief analysis of trends in family expenses over the five years from 1974 through 1978 and assesses whether high-cost illness is growing relative to other medical spending or median family income. The final chapter examines the implications of these analyses for federal policy.

Throughout the paper, four "catastrophic thresholds"--\$3,000, \$5,000, \$10,000, and \$20,000--are used to delineate high-cost, or catastrophic, illness. That is, all families whose annual expenses exceeded the threshold in question are classified as high-cost families. Unless otherwise noted, both expenditures and thresholds are expressed in 1982 dollars.<sup>1</sup>

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1. In certain analyses of historical trends, which are noted in the text, threshold values are nominally the same but are not expressed in 1982 dollars. Rather, they are either expressed in current dollars or indexed to keep pace with changing median family income.

The specific dollar amounts of these thresholds are arbitrary, but their general levels have been chosen for several reasons. The wide range of the thresholds allows one to explore whether moderately high-cost and very high-cost illnesses show different patterns--for example, different growth rates--over time. This is useful in part because of the lack of consensus about how large a medical expense constitutes a catastrophe. Moreover, because of variations in existing insurance plans, many catastrophic health insurance proposals would in effect impose a variety of thresholds, in the general range of those used here, on different families, even if the proposals specify only one nominal threshold in terms of out-of-pocket expenses. For example, a sizable number of proposals introduced in the 96th and 97th Congresses would have required that some or all employment-related health insurance plans limit families' out-of-pocket expenses for covered medical services to a specified annual maximum (\$2,500 in the Carter Administration's national health insurance proposal [H.R. 5400, 96th Congress]; \$3,500 in the Martin-Jones proposal in the 97th Congress [H.R. 7000]; and \$5,000 in Senator Dole's proposal in the 96th Congress [S. 748]). At the low end of the range, families with no insurance other than the legally mandated minimum would pay 100 percent of all covered expenses up to the limit under such plans, and nothing thereafter. The effective thresholds such families would experience under proposals of this sort are illustrated by the \$3,000 and \$5,000 thresholds used here. At the other end of the range, however, most families have existing insurance plans under which they would incur far larger expenses before reaching such a statutory limit. For example, a family whose existing insurance plan required that it pay 25 percent of all covered expenses out-of-pocket would need to incur \$10,000 in total covered expenses before reaching a \$2,500 limit on out-of-pocket expenses. The \$10,000 and \$20,000 thresholds used here illustrate the effective thresholds many such families would face under proposals of this sort.

Several appendixes provide additional background. Appendix A describes the samples and some of the methods used in the paper. Appendixes B and C analyze the extent of "attrition" and "accretion"--that is, families leaving or joining the data base over time. (They show that biases stemming from attrition and accretion, while measurable, are small and should not appreciably affect the conclusions presented in the paper.) Appendix D summarizes an earlier CBO working paper on the extent of protection against the costs of catastrophic illness in current employment-related insurance plans.

Three final appendixes provide supplementary analyses. Appendix E, which elaborates the one-year cross-section in Chapter II, analyzes the effects of age and sex on medical expenses. Appendix F, which also supplements Chapter II, examines the impact of using individuals' rather than families' expenses in reimbursing catastrophic medical expenses. Appendix G adds to the analysis of the long-term expenses of high-cost families (in Chapter III), by examining the impact of several insurance provisions aimed at illnesses that are not confined to a single calendar year.

#### SCOPE OF THE PAPER

The characterization of high-cost illness in this paper hinges on which population groups and which medical expenses are included in the analysis. The population groups and set of services considered here were chosen to be directly relevant to a variety of federal policy issues. Including other population groups or another set of expenses might, however, yield different patterns of expense.

The groups considered in this paper--the non-elderly, non-poor population, as defined below--comprised 52.6 million families, or roughly 60 percent of all families in the United States in 1980.<sup>2</sup> Since only a specific subset of medical expenses were considered, however, the report reflects a smaller proportion of total medical expenses. The 52.6 million families considered here incurred about \$59.4 billion in annual expenses for the services included in this report (see below), in 1982 dollars. This corresponds to roughly 21 percent of total personal health-care expenditures in the nation.<sup>3</sup>

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2. Unrelated individuals are included as single-person families in these numbers.
  3. Total personal health care expenditures in 1980, net of prepayment, administration, and public health activities, were \$220 billion in 1980. In 1980 dollars, the annual expenses considered here totalled roughly \$47 billion.

### Which Population Groups Are Considered?

This paper considers only families with a non-elderly head employed full time and earning at least \$7,200 in 1978 dollars.<sup>4</sup> This corresponded in 1978 to full-time employment at a wage approximately 35 percent above the minimum wage.<sup>5</sup>

There are two primary reasons for excluding low-income families and the elderly from this analysis. First, the data used in this report included no low-income families and only a nonrepresentative sample of the elderly (who were excluded from the analyses). In general, available data on health-care expenditures suitable for analyzing high-cost illness are usually limited to the poor, to the elderly, or to the non-poor, non-elderly. Although some surveys include all three groups, most are too small to permit reliable analysis of low-frequency, high-cost illness. The lack of appropriate data encompassing all three groups is largely a result of the fact that the expenses of the three groups are generally financed through different channels.

Second, on the federal level, the issues of health policy affecting the poor and the elderly are quite different from those affecting the rest of the population. For those groups, the major federal issues concern Medicaid, Medicare, and a variety of much smaller programs that deliver services directly. In contrast, the non-poor, non-elderly population is affected primarily by tax provisions and by various statutes and proposals pertaining to employment-related health insurance (such as catastrophic health insurance and consumer choice proposals).

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4. Because these criteria apply to families, rather than individuals, they exclude some, but not all, unemployed and part-time employed individuals. Such individuals would be excluded if living alone, for example. On the other hand, they would be included if they were spouses or minor dependents of individuals working full time and earning more than the income criterion.

Since insurance claims data do not include identification of the family head, the health insurance contract holder was considered the family head in this study.

5. In terms of the minimum wage in effect in 1982, this corresponds to a current annual wage of roughly \$9,100.

### What Medical Expenses Are Considered?

The set of services considered in this paper is conventional in that it reflects both the coverage afforded by current mainstream private insurance and the services that would have been covered under many federal health benefit proposals. They include:

- o inpatient acute-care hospital charges;
- o surgical expenses;
- o most outpatient charges and out-of-hospital care by physicians;
- o prescription drugs;
- o physical therapy; and
- o limited out-of-hospital private nursing and home health care.

Among the expenses excluded from the analysis are:

- o most care in long-term care facilities;
- o most dental care; and
- o most vision care.

(Outpatient mental health services and some inpatient mental health services provided in acute-care hospitals were available in the data but were excluded from all analyses except Appendix C.)

### What Are the Implications of Excluding Some Population Groups and Medical Services?

The exclusion of certain population groups and medical services from the analyses in this report imposes important limits on the generalizations that can be drawn from them.

Several of the central findings of this paper would likely be somewhat different if the elderly population was included. The proportion of families exceeding the catastrophic thresholds would probably be markedly higher. In addition, the historical trends in catastrophic illness (Chapter IV) would likely be appreciably different. The proportion of the population over age 65 is growing rapidly, as is the average age of the elderly population.

Since the incidence of high-cost illness increases with age (see Appendix E), these factors would produce additional growth of high-cost illness in the population as a whole, above that shown in Chapter IV.

Some of the findings might also have differed if low-income families--and families lacking a full-time employed head--were included. Low-income families and the unemployed are substantially more likely than others in the population to have no health insurance coverage, either private or public. Their use of health-care services would accordingly differ in many cases.

Although the exclusion of certain services--such as most long-term care expenses--from this analysis reflects both common insurance practices and many proposals that have been considered by the Congress, it can have pronounced effects on the patterns of expenses described in subsequent chapters. Families that use large amounts of some of the excluded services are often subject to medical conditions substantially different from those affecting the high-cost families included in the following chapters. For example, the expenses of the chronically and severely mentally ill are largely unrepresented in the data reported below, as are the expenses of individuals with many other chronic, severe handicaps. It is likely that inclusion of these specific expenses would substantially increase the proportion of high-cost families that exceed a catastrophic threshold two or more years in succession. Thus, the patterns of expenses described in subsequent chapters must be interpreted with the caveat that they reflect only a specific set of medical expenses.<sup>6</sup>

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6. The policy issues pertaining to the excluded services are also quite different. Many of the high-cost families whose expenses are excluded differ from those included in terms of both the availability of relevant private or public insurance coverage for their expenses and the network of practitioners and providers from whom they obtain services. For example, the chronically and severely mentally ill are less likely than most others to have stable employment, which lessens the probability of their having private health insurance. (Private insurance often offers little coverage of the relevant services in any case.) Medicare offers only limited reimbursement for the sorts of services such people require, although Medicaid offers more for those who are eligible. Moreover, much of their care is likely to be obtained from state mental hospitals or community mental health centers, rather than from

(Continued)

#### THE ADVANTAGES AND LIMITATIONS OF THE DATA

The data on which this report is based were derived from the claims records of the high-option Blue Cross-Blue Shield Federal Employees' Health Benefit Plan (BCFEHBP). The BCFEHBP data have several advantages for analyses of high-cost illness, but they also have limitations that should be taken into account in interpreting the findings in this paper.

The BCFEHBP data base is far larger than most of the alternative data bases pertaining to the non-elderly, non-poor population. This is an important advantage in assessing high-cost illness, because the low frequency of such illnesses makes estimates based on smaller data bases unreliable. In addition, the BCFEHBP data allow one to track individual families for a period of years, which is essential in order to assess the previous and subsequent experience of high-cost families. Since the BCFEHBP plan is quite comprehensive, the data offer a relatively complete record of families' medical expenses. The BCFEHBP data, and insurance data in general, also probably provide a substantially more accurate tabulation of the expenses of high-cost families than could be obtained from most survey data.<sup>7</sup>

On the other hand, the BCFEHBP data are not entirely representative of the non-elderly, non-poor population. For example, federal workers may be more highly educated than the work force in general, given the high proportion of white-collar jobs in the federal government. Similarly, they probably have a different distribution of income. Moreover, federal workers choosing the Blue Cross High Option Plan may differ from those electing other federal insurance plans. On the other hand, the data were

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6. (Continued)  
the acute-care hospitals and private physicians' practices that are well represented in the data used here. Accordingly, any private or public initiative responding to the needs of such families is likely to differ markedly from initiatives aimed at the high-cost families discussed in this paper.
  7. On the other hand, insurance data from plans with deductibles (including BCFEHBP) probably provide a less accurate measure of the expenses of families with very low expenses. This weakness, however, is less important for the analyses in this report.

weighted to be representative in terms of age, sex, family size, and region--factors that have clear relationships with medical expenses.

In all, the BCFEHBP data should provide a reasonably good appraisal of the large medical expenses of the non-elderly, non-poor population. The limitations mentioned may, however, create some distortion in comparison with the patterns that would appear in a sample designed specifically to be representative.

It is also important to note that the data used in this report reflect the insurance claims of a group with quite comprehensive insurance. To the extent that the use of health care varies with its price, the patterns of expenses shown by less thoroughly insured groups could be different. As noted in Appendix D, however, the average employment-related insurance plan provides quite thorough coverage of large expenses, and most of the non-poor, non-elderly population is covered by such plans.<sup>8</sup> Accordingly, since the focus of this report is on high-cost illness, the comprehensiveness of the Blue Cross plan should not create major biases.

For further discussion of the data, see Appendix A.

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8. See Congressional Budget Office, Profile of Health-Care Coverage: The Haves and Have-Nots (March 1979).



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## CHAPTER II. FAMILY MEDICAL EXPENSES IN A SINGLE YEAR

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In any given year, a sizable number of families have medical expenses many times as great as those of the average family. The frequency and characteristics of these high-cost cases have important implications for health-care policy.

### Importance for Policy

The importance of high-cost illness for policy stems in large part from the substantial portion of total medical expenses attributable to it. Because their medical expenses are atypically large, high-cost families contribute disproportionately to the total. Accordingly, high-cost illness is a major factor to consider in assessing both the problem of high national expenditures for medical care and the equity and efficiency with which health-care resources are allocated. For example, some would argue for directing additional resources into high-cost care for the seriously ill, while others would prefer to see a larger proportion of health-care resources devoted to lower-cost routine and preventive services. In either case, the costs currently associated with high-cost illness and the proportion of families affected by it are critical information.

The issue of high-cost illness arises frequently in the context of private or public efforts to insure individuals and families against the resulting financial burden. Among private employment-related insurance plans, reimbursement for large annual covered expenses is typically quite thorough and has been becoming more so over time.<sup>1</sup> Catastrophic health insurance plans have been enacted by a number of state governments, and a variety of proposals introduced in the Congress would either establish a federal catastrophic health insurance program or mandate that certain employers provide such insurance.

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1. See Appendix D and Congressional Budget Office, Protection from Catastrophic Medical Expenses.

## Major Findings

The major findings of this chapter are the following:

- o In the non-elderly, non-poor population, families exceeding the four catastrophic thresholds analyzed (\$3,000, \$5,000, \$10,000, and \$20,000) in any one year are relatively rare, but they account for a sizable proportion of total medical expenses. For example, about 5 percent of all families exceed \$5,000 in expenses, but they account for about half of total expenses. (As explained in Chapter III, however, the proportion of families who exceed a catastrophic threshold at least once during a several-year period is far larger.)
- o The expenses of these high-cost families tend to be concentrated in one family member, and this concentration becomes more pronounced when higher thresholds are used. In nearly three-fourths of families with expenses over \$20,000, 95 percent or more of family medical expenses are attributable to one family member.
- o The proportion of expenses attributable to inpatient charges is in general large among high-cost families and increases when higher thresholds are used.

## Plan of the Chapter

This chapter begins with a detailed look at the national distribution of medical expenses. A subsequent section explores the role of individual family members in high-cost illness. Appendix E supplies supplementary information on the relationships between medical expenses and the age and sex of the contract holder. Appendix F presents a supplementary analysis of the impact of basing a catastrophic health insurance plan on the expenses of individuals, rather than families.

## THE NATIONAL DISTRIBUTION OF EXPENSES

The general shape of the distribution of medical expenses is that most families cluster at low levels of expense, with a long, thin "tail" of families stretching out to very high levels of expense. This is referred to as a "skewed" distribution: the low-expense end of the distribution is short and compact, while the

high-expense end is long and thin. Figure 1 shows the skewed distribution of expenses graphically.<sup>2</sup>

Another way to show the extreme "skewness" of medical expenses is to look at the percent of families exceeding certain annual levels of expense in any one year (see Table 1). Only 5 percent of all families exceed \$5,000; 2 percent exceed \$10,000, and 0.5 percent exceed \$20,000.

The relatively few families with high expenses in a single year necessarily contribute disproportionately to total medical expenses (see Table 1). This disproportion is more marked when higher thresholds are used, but even in the case of the lowest thresholds, it is striking. The 11 percent of families with expenses over \$3,000 contribute fully two-thirds of all expenses, while the 5 percent with expenses over \$5,000 account for half of all expenses. Families exceeding \$20,000 in a single year comprise only about half a percent of all families, but they account for 14 percent of all expenses.

Another way of assessing the importance of high-cost illness is to consider only expenses in excess of a given threshold. That is, rather than considering all expenses of high-cost families--which include their expenses both above and below the threshold--one can tabulate only their expenses after they reach the threshold. Viewed this way, the disproportionate role of high-cost illness is necessarily smaller but is nonetheless still striking (see Table 1). For example, although 2 percent of all families exceed \$10,000 per year, expenses in excess of \$10,000 per year account for 13 percent of total medical expenditures. Similarly,

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2. The distribution of medical expenses discussed in this chapter and displayed, for example, in Figure 1 and Table 1, are based on 1978 experience, projected forward such that the average expense is equal to the projected average expense in 1982. This method may slightly underestimate the proportion of families at very high levels of expense, because that proportion rose between 1974 and 1978 and might have continued growing between 1978 and 1982. The extent of the underestimation, however, is likely to be very small, and it would primarily affect only families with expenses above \$20,000 per year. For example, the proportion of families exceeding \$20,000 in Table 1 is 0.5 percent. If underestimation is present, the correct figure most likely would be about six-tenths of one percent. Such a bias would not materially affect conclusions presented here.

Figure 1.

Distribution of Family Medical Expenses: Percent of Families with Annual Expenses in Given Intervals

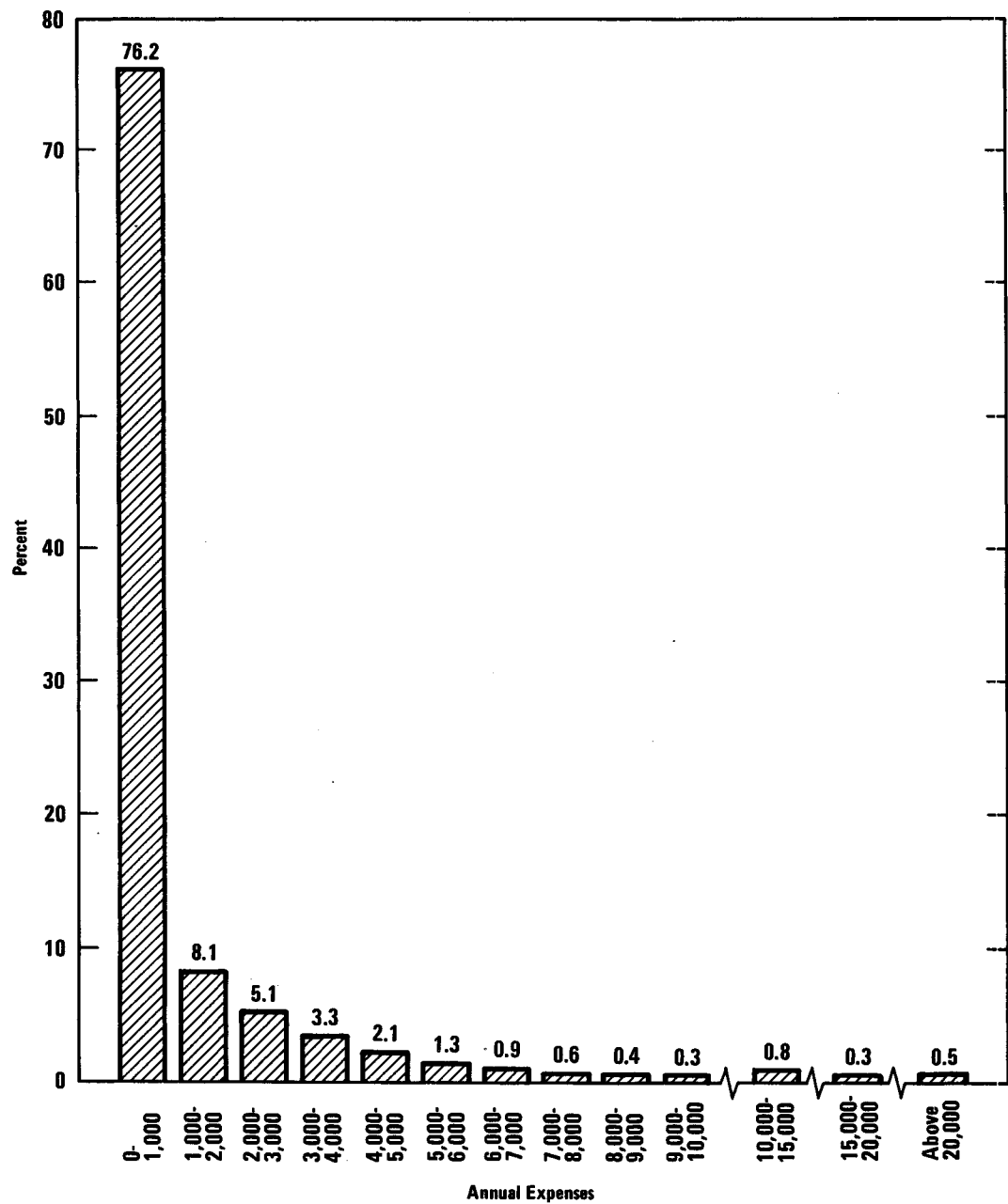


TABLE 1. PERCENT OF FAMILIES EXCEEDING VARIOUS LEVELS OF ANNUAL EXPENSE, PERCENT OF TOTAL MEDICAL EXPENDITURES ATTRIBUTABLE TO THEM, AND PERCENT OF EXPENSES ABOVE THE LEVELS

Level of Expense	Percent of Families Exceeding Level	Expenses of Families Exceeding Levels, as Percent of Expenses of All Families	
		Total Expenses of Families Exceeding Level	Only Expenses Above Level <sup>a/</sup>
1,130 <sup>b/</sup>	23	<u>c/</u>	<u>c/</u>
3,000	11	68	40
5,000	5	50	26
10,000	2	28	13
20,000	0.5	14	5
30,000	0.2	<u>c/</u>	<u>c/</u>

a. Includes all families exceeding the levels, but excludes the portion of their expenses that falls below the level.

b. Average annual expense.

c. Not estimated.

even though families exceeding \$20,000 comprise only 0.5 percent of all families, expenses in excess of \$20,000 contribute 5 percent of all expenditures.

Inpatient expenses comprise a larger share of annual expenses in high-cost families than in the average family. Averaged across all families, about 75 percent of claims expenses were accounted for by inpatient charges. Among families exceeding a \$3,000 threshold, this proportion was about 89 percent. Among families exceeding \$20,000, inpatient charges accounted for 93 percent of total expenses. These proportions remained largely unchanged over the five years covered by the study.

## THE ROLE OF INDIVIDUAL FAMILY MEMBERS IN HIGH-COST ILLNESS

To what extent are large family medical expenses attributable to a single family member? This question has important implications for plans to insure families against the expense of catastrophic illness, because eligibility for reimbursement could be based on either individuals' or families' expenses. This section examines the proportion of annual expenses attributable to a single family member and the number of high-cost individuals in high-cost families. Appendix F relates these questions directly to policy issues by examining the effects of using individuals' expenses rather than families' expenses in determining eligibility for reimbursement under a catastrophic health insurance plan.

The major findings of these analyses are the following:

- o The bulk of the expenses incurred by high-cost families are attributable to one family member, and this pattern becomes more pronounced when higher thresholds are used.
- o Most high-cost families include one, and only one, individual whose expenses taken alone exceed the threshold. This pattern is also more pronounced when higher thresholds are used.

### The Proportion of Expenses Attributable to a Single Family Member

Family medical expenses are typically concentrated in an individual family member, and this concentration is more pronounced among families with high annual expenses. For example, in about three-fourths of all families filing claims,<sup>3</sup> one individual accounts for at least 75 percent of claimed expenses, and in more than half of all families filing claims, one individual accounts for 95 percent or more of the family's total (see Table 2). Among families exceeding \$20,000 in expenses, the degree of concentration is substantially greater. In 92 percent of such families, one individual accounts for at least 75 percent of expenses, and

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3. This excludes both families with no covered expenses and families that chose not to file claims because their expenses were small. The excluded families comprise about 34 percent of the sample.

TABLE 2. PERCENT OF FAMILIES IN WHICH ONE INDIVIDUAL ACCOUNTS FOR MORE THAN SPECIFIED PERCENTAGES OF TOTAL FAMILY EXPENSES, BY LEVEL OF EXPENSE

Percent of Expenses Attributable to One Family Member	All Families Filing Claims <sup>a</sup>	Families With Annual Expenses Exceeding			
		\$3,000	\$5,000	\$10,000	\$20,000
75 or more	75	77	77	82	92
80 or more	71	73	73	79	89
85 or more	67	68	68	74	85
90 or more	62	61	62	69	78
95 or more	56	51	53	62	71

a. Excludes the approximately 34 percent of families that had no expenses or chose not to file claims because their expenses were small.

in nearly three-fourths of such families, one individual accounts for at least 95 percent of expenses.<sup>4</sup>

#### The Number of High-Cost Individuals in High-Cost Families

Another way of looking at the role of individuals in high-cost illness is to calculate the number of high-cost individuals (that is, individuals exceeding catastrophic thresholds) within high-cost families. This can be done by separating the families that exceed a given threshold into categories: those in which no single family member alone exceeds the threshold, those in which

4. These percentages include single-person families, in which all expenses are necessarily attributable to one person. Deleting all single-person families, however, has little effect on the percentages in Table 4, particularly when high thresholds are used.

only one family member exceeds the threshold, and those in which two or more family members exceed the threshold.

A sizable portion of high-cost families (from 15 to 21 percent, depending on the threshold), have no single family member whose expenses taken alone exceed the relevant threshold (see Table 3). These are the families that would be classified as high-cost cases under a family threshold, but not if the same dollar threshold was applied to the expenses of individuals.

TABLE 3. PERCENT OF HIGH-EXPENSE FAMILIES WITH ZERO, ONE, OR TWO OR MORE INDIVIDUALS EXCEEDING INDIVIDUAL THRESHOLDS, BY THRESHOLD

Percent of Families Exceeding Threshold With:	Threshold			
	\$3,000	\$5,000	\$10,000	\$20,000
No Single Family Member Exceeding Threshold	17	21	18	15
One Family Member Exceeding Threshold	79	77	81	85
Two or More Family Members Exceeding Threshold	4	2	1	a/

a. No reliable estimate available. This occurred in only one instance in the 1978 sample used here, corresponding (when weighted) to less than 0.02 percent of the families exceeding \$20,000 in that year.

The majority of high-cost families include only one family member whose expenses taken alone exceed the threshold. When the lower two thresholds are used, about three-fourths of high-cost families include only one high-cost individual. This proportion increases if higher thresholds are used, and with a \$20,000 threshold, about 85 percent of high-cost families include only one high-cost individual.

Few high-cost families include two or more individuals who alone exceed the threshold, particularly when high thresholds are used. Using a \$3,000 threshold, about 4 percent of all high-cost families include two or more high-cost individuals (see Table 3). This drops to 1 percent with a \$10,000 threshold and to nearly zero with a \$20,000 threshold.<sup>5</sup> In some cases, it is simply coincidence that two individuals in the same family exceed a threshold in the same year, but in other instances their illnesses are clearly related.<sup>6</sup>

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5. Only one family of the 126,590 for whom 1978 data were used included two or more individuals who exceeded \$20,000 in that year.

It is possible that families with two or more high-cost individuals are somewhat underrepresented in these data. Extremely serious automobile accidents could lead to expenses over the threshold for each of several family members. Some portion of expenses stemming from such accidents would be reimbursed by automobile insurance policies rather than by Blue Cross. This should be a minor problem, however, because these data should include all related expenses if Blue Cross reimbursed even a small fraction of them. Only cases where the automobile policy paid the expenses in full should be omitted from these data.

6. Maternity is one context in which two high-cost illnesses can be clearly related. A seriously ill newborn can generate large expenses in a short time, because charges for neonatal intensive care are typically high. Likewise, if delivery is complicated, the mother's expenses can mount rapidly. For example, in one case in the data used here, a newborn placed in intensive care accrued expenses of \$10,400 in the first 11 days of life. The mother, who delivered by cesarean section, accrued expenses of \$5,000 for delivery and related expenses. (Prenatal care and delivery are often billed together as a single charge at the time of delivery, and in this instance they clearly were.) Apart from that 11-day period, however, the family's total claims for the year amounted to less than \$100.

